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Home Economics

Alice Peloubet Norton

The principle on which a course of cookery is based will vary with the object of the course, the age of the pupils, and their surroundings and interests. Whether the order is determined by the study of the food principles, by the different methods of cookery, or whether some other grouping is chosen, the work must be carefully adapted to the class. With the younger pupils the most logical course is not always the best. It is important to furnish a motive for the work which will give real interest in the beginning, and arouse the desire for investigation and experiment on the part of the child. With older pupils, as in the normal class, there is generally a strong motive present or the work would not be undertaken.

With the Fifth Grade children, who are studying the early colonization of the country, the native fruits and grains of the eastern coast have furnished a starting point. In the Seventh and Eighth Grades the motive was found in the preparation of a simple Thanksgiving luncheon to be served in French fashion, the pupils who act as waiters speaking French only.

In the other grades the work is in close connection with the nature study, beginning with fruits and cereals.

It was thought best at first that the training class should follow somewhat closely the order of work in the grades, but it was found better to give an independent course, and to take the preferred order of proteid before starch, instead of that indicated in November.

After the study of water and mineral matter the outline is as follows:

V. Proteids.

Composition. Use in body as tissue builders and as fuel foods. Discussion of reason why other fuel foods are needed. Testing of proteids with Millon's reagent, and with nitric acid and ammonia. Allied nitrogenous compounds: gelatine, extractives. Examination and testing of dried gluten previously obtained from flour. Other vegetable proteids, as legumin of peas and beans. Casein precipitated from milk by acid; making of sour-milk cheese. Casein precipitated by rennet, and the making of cheese curd and of junket.

Experiments with albumen, to determine its solubility in water, and its cooking temperature. Cookery of eggs; dropped, creamy, and in omelet.

VI. Fats.

Source. Comparison of animal and vegetable fats as to composition, cost, digestibility. Use in body as fuel. Effect of cooking on digestibility. Fat obtained from milk; churning of butter.

VII. Starch.

Composition; source; value as food; test. Digestibility of starch from different sources. Examination under microscope of starch grains from potato, corn, wheat. Effect of heat, as in popped corn. Effect of different degrees of heat conveyed by means of water. Comparative study under microscope of starch mixed with cold water, starch and water heated to 60° C.; starch and water boiled. Boiling of potato and rice, weighing each before and after cooking. Cookery of cereals.

VIII. Change of starch into sugar.

Change of starch into sugar by means of prolonged heat; by acid; by the action of saliva. Testing of different foods for sugar with Fehling solution. Test applied to cane sugar before and after heating with acid. Classification of carbohydrates. Sugar cookery.

The classification of foods given below is adapted from Goodfellow, and is chosen because of its simplicity. "Albuminoid" unfortunately is used in two senses by different authors, so that "gelatinoid" seems less confusing to the beginner.

Classification of Foods

- Inorganic (incombustible).
  - 1. Water.
  - 2. Salts or mineral matter.
- Organic (combustible).
  - 1. Nitrogenous.
    - (a) Proteids.
    - (b) Gelatinoids.
  - 2. Non-nitrogenous.
    - (a) Fats and oils.
    - (b) Carbohydrates.

The more important carbohydrates may be grouped as follows:

1. Glucoses ($C_6H_{12}O_6$).
   - Dextrose.
   - Levulose.
   - Galactose.
2. Sucroses ($C_{12}H_{22}O_{11}$).
   - Cane sugar.
   - Lactose, or milk sugar.
   - Maltose, or malt sugar.
3. Starches ($(C_6H_{10}O_5)_n$).
   - Starch.
   - Glycogen.
   - Dextrin.
   - Cellulose.
   - Gums.

References: F. L. Sargent, *Corn Plants*, Houghton, Mifflin and Co.; Halliburton, *Essentials of Chemical Physiology*, Longmans, Green and Co.; J. E. Peabody, *Laboratory Exercises in Anatomy and Physiology*, Henry Holt and Co.; *Rumford Kitchen Leaflets*, Nos. 7, 8, 9, 10, 11, 12, Rockwell and Churchill Press; *American Kitchen Magazine*, Vol. VII, p. 66, Home Science Publishing Company; Mary Hinman Abel, *Sugar as Food*, Farmers' Bulletin, No. 93, United States Government Bulletins.

Cooking in the Primary Grades

Flora J. Cooke

During December the children will study sugar. In the Fourth Grade they will find out where and under what general conditions sugar-cane, beets, and sugar-maple trees grow, and something of the different methods used in obtaining sugar from these sources. As aids in this work they will use selected library books and pictures, museum specimens, and simple experiments as indicated below. Each child will take some phase of the subject to investigate, and will summarize what he is able to find out upon his particular topic into some suitable form for presentation to his class.

This work will be supervised by the teacher and whenever possible the data thus gathered will be printed in the form of reading lessons for the class. Each reading lesson will be illustrated according to the taste of the one preparing it, his motive being at all times to make his points perfectly clear to his audience.

Some of the topics selected will probably be the planting, irrigation, fertilizing, and manufacture of sugar; the properties and characteristic uses of the different varieties of sugar; the study of recipes for the making of appropriate candies with and without heat.

A group of children will prepare a set of sugar samples for the museum illustrating stages of development in different kinds of sugar. These will be properly labeled and catalogued according to the information gained by the group during the month.

Another group may record their experiences in the uses of sugar in the preserving and seasoning of food. The exact phase of the work chosen will depend upon the interest, experience, and abilities of the children who must do the work. The cooking for the month will be confined to the making of simple candies for the Christmas reception. A record of all the experiments and investigations will be kept in the cook-books for reference and future use. The desire of the children to make good candy will sufficiently stimulate them to measure quantities accurately, and will require a continual exercise of each child's reasoning powers in the judging of temperatures, consistencies, and the proper conditions in cooking. After appropriate directions have been given, each child will make his own observations and work out his individual problem independently.

The experiments will depend entirely upon the questions of the children as they fail or succeed in their work. They will probably discover caramel and carbon in this work, and note the changes which take place in sugars when subjected to the action of heat. Simple experiments in the dissolving of sugar, evaporation of water, and conditions for crystallization will be performed by the children if they are necessary as explanation for the results observed. For the reasons stated above the exact experiments cannot be foretold.

The following is a list of reference books used in the study of sugar:

REFERENCES

Teacher's List

A Century of Sugar Making in Louisiana. Century Magazine, v. 13, p. 100-120.

Church—*Sugar* (see *History of Food,* p. 31-34). Chapman & Hall.

United States Department of Agriculture—*Sugar* (see Yearbook, 1898, p. 566-7).

Colorado—Experiment Station. Bulletin, Nos. 21, 42, 46, 51.

Idaho—Experiment Station. Bulletin, Nos. 12, 18.

Illinois—Experiment Station. Bulletin, No. 45.

Indiana—Experiment Station. Bulletin, No. 68.

Iowa—Experiment Station. Bulletin, No. 37.

Kansas—Experiment Station. Bulletin, No. 94.

Maryland—Experiment Station. Bulletin, No. 61.

Michigan—Experiment Station. Bulletin, Nos. 177, 179.

New York, Cornell University—Experiment Station. Bulletin, Nos. 18, 183.

North Dakota—Experiment Station. Bulletin, No. 5.

Ohio—Experiment Station. Bulletin, Nos. 99, 115.

Oregon—Experiment Station. Bulletin, No. 59.

Pennsylvania—Experiment Station. Bulletin, Nos. 40, 47.

South Dakota—Experiment Station. Bulletin, Nos. 56, 62.

United States—Agriculture, Department of. Farmers' Bulletin, Nos. 52, 73, 79, 92, 93, 113.

United States—Representatives, House of. Document, No. 699.

Vermont—Experiment Station. Bulletin, 26, 73.

Vermont—Annual Report, No. 11.

West Virginia—Experiment Station. Bulletin, Nos. 55, 64.

Children's Reading

Carpenter, *Visit to a Sugar Plantation* (see *History North America,* p. 143-150). American Book Co.

Chase and Clow, *Sugar* (see their *Stories of Industry,* v. 2, p. 135-9). Educational Publishing Co.

Kirby M. and Kirby E., *Sugar* (see their *Aunt Martha's Corner Cupboard,* p. 43). Flanagan.

Troeger, *The Maple* (see *History of Harold's Rambles,* p. 37-43). Appleton.

Warner, C. D., *Sugar Camp* (see Cyr Fourth Reader, p. 268-75). Ginn.

Art

John Duncan

During this month our attention will be turned to the planning of the costumes and accessories of the Christmas festival, and to the designing of Christmas presents. The art work of the High and Pedagogic Schools will center during this month about the banners to be used in the Christmas morning service. The banners will be embroidered with designs illustrative of sun myths referring to the conflict of light and darkness, of the gods of warmth and life with the demons of cold and death. The stories of Osiris, and Phœbus, and Baldur, and Cuchulainn, and Michael the Archangel, will lead up to the Christian conception. And these banners